

## **Appendix A-1**

### **Ideas for Nature on Playgrounds**

#### **Trees**

The only way to truly create a successful natural environment for children is to copy as closely as possible the vegetation of an established forest. This means that all trees and shrubs in the Natural Playground are more mature, native specimens. By using mature, native plants it is less likely that children will be able to trample or hurt these plants, giving the plants a chance to thrive in their new surroundings



#### **Plant trees!**

- Plant trees that bloom in the spring
- Plant trees with colorful leaves in the fall
- Plant weeping trees that create cozy areas underneath
- Create a tree circle





Children's Garden at Red Butte Garden





## Shrubs, plants and grasses



- Plant low shrubs that create privacy for children but still allow caregivers to see the whole area
- Plant tall grasses that wave in the breeze and create cozy areas or pathways





## Rocks and other Natural features



## Use Logs and Wood



**Bienenstock Natural Playgrounds** Tables and Chairs Stools and tables cut from fallen logs, and built for those under 6, allow children the chance to play together or alone and create opportunities for outdoor learning.



Bienenstock Natural Playgrounds - Fallen log seating area





Children can climb and balance on more natural materials. You can make your own or purchase these items at <http://www.arborday.org/shopping/sourcebook/merchlist.cfm?category=5>

## **Add nature to fences**







Self-watering window boxes can also be installed on fences.



## Sand Play

Sand areas should be deep – ideally 18 to 24 inches deep. If possible, add a drainage bed with geotextile felt to keep stagnant water out of the sand. This is important because we recommend that a water source be available in or beside every sand area. Dry sand blows and creates an ocular hazard, and besides, you can't create anything cool from dry sand.



## Water Features

Programs have found interesting ways to make water available for play. Place your water source close to your sand area.



This is a dog lick installed using PVC pipe and the fence. You can find dog licks at pet stores or on line.

*La Jolla United Methodist Church Nursery School, La Jolla, California*



A hand pump installed in a fifty-gallon barrel provides water in a play yard where no other outdoor water is available.



Irvington Little School, Seattle, Washington

Make sure any hand pump you use is safe. It may be difficult to tell if there are pinch points in a picture.

This hand pump fits on 5-gallon water bottles. Cheap and safe.



## Water Play System



**Water features with out ponds prevent the health and safety problems associated with waterfalls. Caregivers can easily turn the waterfall on and off. The construction process is about the same as a waterfall except the pond is filled with large stone and the pump is placed in a vault at the bottom. A nice way to make an area relaxing**





## Gardens



Raised beds allow children and caregivers to easily work in gardens

You can purchase this type of “self-watering planter”. It has a water reservoir in the bottom that will keep your plants alive over those 3 day summer weekends.



## Loose Parts



Add natural “loose parts” such as:

- Pinecones
- Shucking corn
- Hay bales
- Stones and river rocks
- Seashells
- Seeds and seed pods





## Vine Structures



Gardening supply stores and catalogs sell flexible trellis materials that can be used to form play spaces. Be sure that the openings are less than 3.5 inches. If not, you can cover the trellis with mesh.



## Separate quiet areas from climbers and active play



Bridge leads from active play area to nature area



## Add a hill



Planet Earth Playscapes



**Add Platforms or gazebos for dramatic play, shade and shelter from snow and rain**



**Children's Garden at Red Butte Garden**



## Putting Nature on hard surface playgrounds



## **Appendix A-2**

### **Why is nature important?**

Recent research has shown that exposure to nature has important positive results for children.

- Green plants and natural vistas were linked with reduced stress among highly-stressed children in rural areas, with the results the most significant where there are the greatest number of plants, green views and access to natural play areas (Wells and Evans, 2003).
- Proximity to, views of, and daily exposure to natural settings has been associated with children's ability to focus and enhances cognitive abilities (Wells, 2000).
- Based on surveys of teachers in schools that had schoolyards with both green areas and manufactured play areas, children were rated as more physically active, more aware of nutrition, more likely to engage in more creative forms of play, and they also played more cooperatively (Bell and Dymont, 2006).
- According to researchers at the University of Illinois, the greener a child's everyday environment, the more manageable their symptoms of attention-deficit disorder (Faber Taylor et al., 2001; Kuo and Faber Taylor, 2004).

Brain research reported in the Scientific American Mind (May 2009) reveals the following:

- What you see when you look out the window matters. Views of nature (trees, grass, etc.) makes it easier to concentrate, focus and pay attention.
- Students with views of nature scored higher on vocabulary, language arts and math.
- Students in rooms with the most natural light score 20 – 25% higher in math and reading.

### **Ways to add nature**





- Plant trees
  - Plant trees that bloom in the spring
  - Plant trees with colorful leaves in the fall
  - Plant weeping trees that create cozy areas underneath
  - Plant low shrubs that create privacy for children but still allow caregivers to see the whole area
  - Create a tree circle
- Plant grasses, herbs and flowers
  - Create a lawn area
  - Plant tall grasses that wave in the breeze and create cozy areas or pathways
  - Plant herbs where children walk or play
- Add large rocks to climb on or use as table tops
- Use real tree trunks to define areas Plant a vine tepee
- Plant vines on chain link fences or cover the chain link with inexpensive twig or bamboo fencing
- Create vine teepees for quiet and pretend play
- Add a large sand area with access to water








- Add a water feature
  - That allows children to explore flowing water and/or
  - That allows children to bring water to the sand area for serious sand play
- Provide outdoor tables (not picnic tables) for children to stand at and use for art activities and to explore/examine natural items
- Add natural “loose parts” such as:
  - Pinecones
  - Shucking corn
  - Hay bales
  - Stones and river rocks
  - Seashells
  - Seeds and seed pods
- Plant a garden
  - Plant a garden for children and staff to take care of
  - Use large raised planters that can be placed on hard surfaces or on dirt
- Build a covered outdoor space that can be used year around
  - In the summer, it provides a shaded area
  - In the winter, it provides an area with less/no snow
  - In the rain, it allows children to experience the rain with out getting too wet

## Appendix A-3

### Some trees recommended for child care centers

<p>1. Norwegian Sunset Maple</p> <ul style="list-style-type: none"> <li>• Drought tolerant once established</li> <li>• Very hardy</li> <li>• Great fall color</li> <li>• Tougher than many other maples and likes our soil</li> <li>• Great leaves for children to play with in the fall</li> </ul>	
<p>2. Amur Maple</p> <ul style="list-style-type: none"> <li>• Compact, only 20 feet tall</li> <li>• Multi-stemmed</li> <li>• Reasonably drought tolerant</li> <li>• Great fall color</li> <li>• Great leaves for children to play with in the fall</li> </ul>	
<p>3. Honey Locust cultivars that are thornless and seedless</p> <ul style="list-style-type: none"> <li>• Try Sunburst, Shademaster or Majestic cultivars</li> <li>• Lacy foliage gives loose, open shade</li> <li>• Fall color is yellow</li> <li>• Leaves need little raking</li> </ul>	
<p>4. Burr Oak</p> <ul style="list-style-type: none"> <li>• Slow growing</li> <li>• Massive trunks</li> <li>• Adapts to soils more easily than other oaks</li> <li>• Sorry – no acorns for 10 years or so</li> </ul>	



<p>5. Weeping Mulberry</p> <ul style="list-style-type: none"> <li>• Mulberry trees like water, heat, and are tolerant of any kind of soil.</li> <li>• May need to be staked as they get top heavy the first few years.</li> <li>• Up to 15 feet high and 8-15 feet wide</li> <li>• Choose a Chaparral, the male tree – it will be seedless</li> <li>• Creates a cozy space underneath</li> </ul>	
<p>6. Weeping Cherry</p> <ul style="list-style-type: none"> <li>• Medium growth rate for height, but rapid growth of the weeping stems</li> <li>• Creates a cozy space for play</li> <li>• Beautiful spring flowers</li> </ul>	
<p>7. Weeping Pussy Willow</p> <ul style="list-style-type: none"> <li>• 6 – 8 Feet tall and 5 – 6 feet wide</li> <li>• will need more water than other trees</li> </ul>	
<p>8. Crab Apple</p> <ul style="list-style-type: none"> <li>• Prairie Fire, Spring Snow and Royal Raindrop are good cultivars</li> <li>• Beautiful spring blooming trees</li> <li>• Leaves change colors from maroon to green to red/orange/purple in fall</li> <li>• Fruits are small or are eaten by birds so there isn't a "littering" problem</li> <li>• 15 – 20 feet tall</li> </ul>	
<p>9. Flowering Pear Tree</p> <ul style="list-style-type: none"> <li>• Cleveland is best cultivar</li> <li>• Hardy and fruitless</li> <li>• Quick grower, up to 20 – 30 feet</li> <li>• Leaves turn dark scarlet</li> </ul>	

**10. Redbud Tree**

- One of the first trees to flower in spring
- Ideal for tight places or small lots
- 20-30 ft. tall
- Grows in a variety of soils & climates



**11. Serviceberry**

- Produces white flowers in the spring
- Edible berries
- Good fall color



**Rose of Sharon**

- Blossoms and nectar attract hummingbirds
- Flowers on this woody shrub come in several colors, including white, pink, purple, and red.
- Blooms in summer and fall
- Handles drought and poor soil.



**Butterfly Bush**

- Attracts hummingbirds and butterflies
- Fragrant flowers
- Very hardy
- Comes in many colors
- Can be pruned to keep it smaller



**Lilac**

- Easy to grow
- Wonderful spring fragrance and blooms





## **Appendix A-4**

### **Recommended Annual Vines**

#### **Black Eyed Susan Vine**

Unlike many climbing vines, this one isn't invasive so it can be incorporated into existing gardens without fear of crowding out existing plants. It's a great choice for hanging baskets and window boxes. Height: 5' to 10' trailing vine

#### **Cardinal Climber Vine**

The deep red flowers with white or yellow throats are sure to draw attention to your trellises, fences and poles. Height: 6' to 20' vine

#### **Cypress Vine**

This vine can add a tropical texture to your landscape with its interesting foliage and mix of bright red, pink and white flowers. With the right conditions, it grows to 20 feet. Height: 8' to 10' vine

#### **Hyacinth Bean Vine**

This striking vine will have your visitors asking if it's real! The flowers are followed by velvety purple bean pods. Height: 6' - 20' vine

#### **Mina Lobata**

'Firecracker Vine' or 'Exotic Love,' this unusual, exciting, interesting annual vine has up to 12 beautiful 2" tubular flowers on each spike. Performs well on trellises and in hanging baskets. Height: 6' to 10' vine

#### **Morning Glories**

In the summer, flowers open in the morning, and in the fall they stay open all day. Morning glories are grown as a groundcover in difficult areas. Height: 8' - 10' vine

#### **Sweet Peas**

Sweet peas are shorter than most of the other annual vines mentioned here, but their outstanding fragrance make them worthwhile when height isn't important. They make a wonderful cut flower. Height: 3' to 5' vine

#### **Pole Beans**

Some good ones to try are scarlet runner beans that grow 8 – 12 feet in a season and , tricolor beans, and yard-long beans

#### **Gourds or Jack-Be-Little pumpkins**

Lagenarias gourds are vigorous growers and develop large plants. Vines may reach 20 to 30 feet in length. Lagenaria types readily climb by long twining tendrils, and are often grown supported by a trellis. Cucurbitaceae (Cucurbit) family of gourds includes many types of squash and pumpkins.

## Appendix A-5

### Resources for including nature on your playground

#### Web Sites

Hardy Plants for Waterwise Gardens , University of Washington	<a href="http://www.wsu.edu/~lohr/wcl/index.html">http://www.wsu.edu/~lohr/wcl/index.html</a>
Jordan Valley Conservation Garden	<a href="http://www.conservationgardenpark.org">http://www.conservationgardenpark.org</a>
Earthplay	<a href="http://www.earthplay.net/">http://www.earthplay.net/</a> look under the “Resources” tab
Natural Learning Initiative	<a href="http://www.naturalearning.org/index.htm">http://www.naturalearning.org/index.htm</a>
Bienenstock Natural Playgrounds	<a href="http://www.naturalplaygrounds.ca">http://www.naturalplaygrounds.ca</a>
Kids Gardening: Creating a Herb Garden	<a href="http://www.kidsgardening.com/growingideas/projects/may04/pg1.html">http://www.kidsgardening.com/growingideas/projects/may04/pg1.html</a>
Creating a Vine Teepee	<a href="http://www.naturalplaygrounds.info/PDF/diy_teepee.pdf">http://www.naturalplaygrounds.info/PDF/diy_teepee.pdf</a>
Harvesting Rainwater	<a href="http://www.naturalearning.org/docs/diy_rainbarrel.pdf">http://www.naturalearning.org/docs/diy_rainbarrel.pdf</a>
Building a Tree Circle	<a href="http://www.childcareexchange.com/">http://www.childcareexchange.com/</a>
<b>Catalogs</b>	
Gardener’s Supply Company	<a href="http://www.gardeners.com">www.gardeners.com</a>
Nature Explore Sourcebook	<a href="http://arborday.org/shopping/sourcebook/index.cfm">http://arborday.org/shopping/sourcebook/index.cfm</a>
Acorn Naturalists	<a href="http://www.acornnaturalists.com">www.acornnaturalists.com</a>
Kids Gardening	<a href="http://www.gardeningwithkids.org/">http://www.gardeningwithkids.org/</a>

#### Books

Natural Playscapes	Rusty Keeler, Exchange Press
POEMS: Preschool Outdoor Environment Measurement Scale	Karen DeBord, Linda Hestenes, Robin Moore, Nilda Cosco & Janet McGinnis North Carolina State University
Designs for Living and Learning	Deb Curtis and Margie Carter, Redleaf Press
Sunflower Houses: Garden Discoveries for Children of All Ages	Sharon Lovejoy, Interweave Press
A Child’s Garden	Molly Dannenmaier, Simon & Schuster